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## Geographical Variation in the Laughing Thrush,

### *Garrulax affinis*

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In studying the material collected by Dr. Robert L. Fleming in Nepal in 1949, now in the Chicago Natural History Museum, it was apparent that there was more variation in the species, *Garrulax affinis*, than was ordinarily recognized. The new material from western Nepal represented an extension of the known range and a new subspecies. A review of our Chinese material, augmented by material kindly loaned from the U. S. National Museum by H. Deignan, the American Museum of Natural History by Dr. E. Mayr, and the Peabody Museum of Natural History by Dr. S. D. Ripley, showed that instead of two (sometimes disputed) there were three races in China, which perhaps accounted in part for the confused treatment of those forms.

The species ranges at considerable altitudes from the eastern Himalayas to western China and northern Indo-China. The geographical variation does not represent smooth clines, but some generalizations are possible: the palest birds with brownish crowns come from both the east and the west edges of the range, with darker birds between, but the darkest birds come from the southeastern part of the range. The pale area on the side of the neck is whitest and most distinct in the west, least so in the northeast. The edgings of the breast feathers are palest and distinct in the west; darkest and distinct in the southeast, and moderate and little distinct in the northeast. The edges of the secondaries are most citrine olive in the west, least so in the northeast. In Table I the trends are represented by series of numbers that are arranged in geographical sequences.

It seems useful to have six subspecific names to use in discussing the variation in the species.

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*Garrulax affinis finis flemingi* new subspecies.

*Type.* Chicago Natural History Museum 211,546 from Lete, Baglung District, West Nepal (about lat. 28° 40' N., long. 83° 40' on the Kali Gandaki River). Adult female collected December 14, 1949 by R. L. Fleming.

*Diagnosis.* A pale race, with a brownish crown and conspicuous grayish whitish edgings to breast feathers. Similar to *G. a. affinis* of extreme eastern Nepal and Sikkim but differs in the ground color of the under parts being much paler brown, and the edging of the breast feathers being much paler, whitish, and conspicuous instead of being dull gray and inconspicuous. Other minor, less constant differences are the average browner (less blackish) crown, and the lighter, more olive (less brownish olive) back.

*Measurements.* Wing ♂ 95, 97, 98, 101, 108 mm.

*Range.* Western Nepal; known only from the valley of the Kali Gandaki.

*Remarks.* This well marked race comes from an area, western Nepal, from which the species had not been recorded.

The series of three adults and two first-year females is fairly uniform. Compared with twelve birds of *G. a. affinis finis* from eastern Nepal (Mangalbare) and nine from Sikkim, there is only one bird (from Sikkim) of the 21 that approaches in characters the west Nepal *G. a. flemingi*. All the other 20 are clearly separable at a glance.

*Specimens examined* 5: West Nepal: Tukuche 2 ♀ ; Lete 1 ♀ ; Dana 1 ♀ ; Ulleri 1 ♀ (all on Kali Gandaki River, taken November-December, 1949).

*Garrulax affinis affinis* Blyth.

*Garrulax affinis* Blyth, 1843, Jour. As. Soc. Bengal, 12, p. 950. Nepal, hereby restricted to East Nepal.

*Diagnosis.* Like *G. a. flemingi* but under parts generally darker with edgings to breast feathers dull gray and relatively inconspicuous; crown averages more blackish, but is only mostly blackish in 6 of the 21 specimens examined.

*Measurements.* Wing a (♀) 103-114 (ay. 107.2); ♀ (♀) 101-107 (ay. 103.8 mm.).

*Range.* Eastern Nepal, Sikkim, and Bhutan (Kinnear, 1937, p. 33). The specimens from southeast Tibet that Kinnear (1944, p. 76) recorded as *affine*, though somewhat darker than Bhutan and Sikkim birds, sound like an approach to *oustaleti* or *blythi*.

*Remarks.* The name *G. a. affinis* has long been used for the east Nepal-Sikkim-Bhutan birds and it seems advisable, logical, and possible to continue

this use by restricting the type locality to eastern Nepal. Dr. S. D. Ripley writes me that this accords with the probable origin of Hodgson's later material. This often was brought to him from extreme eastern Nepal by his Nepali collectors while he was residing in Darjeeling.

*Specimens examined 21:* (East Nepal, Mangalbare 12; Sikkim, Snatong 2; Jeluk 2; Yumthang 1; Thangu 4).

**Table I. Geographical Variation in *Garrulax affinis***

	West to East and then North					
	West Nepal	Sikkim	Burma, Yunnan	Tonkin	China Muli area	China, Muping area
General color: pale (1) to dark (4)	1	2	3	4	2	3
Crown: brown (1) to black (4)	1	2	4	4	2	3
Neck spot: white and well defined (1) to gray and ill-defined (4)	1	1	2	2	3	4
Edging of breast feathers: whitish (1) to dark gray (3)	1	2	3	3	2	2
Edges of secondaries: citrine olive (1) to greenish olive (3)	1	1	2	3	3	3

*Garrulax affinis oustaleti* (Hartert).

*lanthocincla affinis oustaleti* Hartert, 1910, Vog. Pal. Faun. **I**, p. 633. Type locality Tsekou, Upper Mekong Valley, Yunnan.

*Diagnosis.* Like *G. a. affinis* but darker; crown black or almost completely blackish in all specimens; upper back darker, more brownish (less olive brownish); under parts generally darker, with more of a blackish wash extending down from the throat, and the gray edgings of the breast feathers darker and hence giving a rather more conspicuous scaled pattern; light area on the side of the neck more grayish and less white, but still conspicuous and well defined; the outer edges of the secondaries duller, but still conspicuous, citrine olive.

*Measurements.* Wing, Burma ' 109, 111, 112; 9 103, 104, 105, 107, 107, 109 mm.; Northwest Yunnan m (10) 103-113 (ay. 107.6); 9 (7) 101-109 (ay. 105 mm.).

*Range.* Upper Burma east to the Upper Mekong Valley and the Mekong-Yangtze divide near Lutien (about lat. 27° 15', long. 99° 30') in north-western Yunnan.

*Remarks* There have been questions as to the validity of this race, not as to being different from *G. a. affinis*, from which it is clearly separable, but in regard to some of the following races. This is discussed below.

*Specimens examined* 33: Burma: Adung Valley 3; Myitkyina-Salween area 9; Yunnan, upper Mekong Valley 11; upper Mekong-Salween area 10.

*Garrulax a f finis saturatus* Delacour and Jabouille.

*Garrulax affinis saturatus* Delacour and Jabouille, 1930, Ois. et R. F. O., 11, p. 400. Type locality Fansipan, Chapa, Tonkin.

*Diagnosis.* Like *G. a. oustaleti* but darker, black of head more extensive and extending farther down on throat; both under parts and upper parts darker and duller; white malar spot reduced in size as is the distinct gray area on side of neck; outer edges of secondaries duller greenish olive; wing also slightly shorter.

*Measurements.* Wing *e* 99 mm. (from original description); 9 99 mm.

*Range.* Tonkin.

*Remarks.* I have seen a single topotypical female, from which the above diagnosis was made, which accords well with the original description. Apparently this is a fairly well defined race.

*Specimens examined* 1: Tonkin.

*Garrulax affinis blythi* (Verreaux).

*Trochalopteron blythi* Verreaux, 1870, Nouv. Arch. Mus. Hist. Nat., Bull., 6 (not 4 as sometimes quoted) p. 37. Type locality Szechwan, restricted here to the vicinity of Mouping.

*Diagnosis.* This race differs most sharply from all the preceding races in having the pale spot on the side of the neck dull gray and little distinct. It is a dark race, as dark as *oustaleti* and differs further in being grayer on the breast, the gray edgings being not as dark, and not so sharply defined so that the scaled pattern is less distinct and the whole breast has more of a grayish cast. The crown, though blackish, has more of a brownish cast than has *oustaleti*. The outer edges of the secondaries are greenish olive, rather than citrine olive as in the preceding forms.

*Measurements.* Wing *f* (9) 101-108 (ay. 105.5); Q 104.

*Range.* Western China in the Muping\* area (about lat. 30° 25', long. 102° 50').

*Remarks.* Berlioz (1928) has pointed out that the type of *blythi*, without precise locality, probably came from Moupin which can be taken as the type locality.

*Specimens examined* 13: from Mouping area of west China.

\*Sometimes spelled Mouping; now Paohsing.

*Garrulax affinis muliensis* new subspecies.

*Type.* Chicago Natural History Museum 68,165 from Muli (or Mili, about lat. 28° 15', long. 100° 50'), western China; adult female collected April 2, 1929, by H. Stevens.

*Diagnosis.* A pale race, with a brownish rather than a blackish crown, and pale area on side of neck rather indistinct. Compared with *blythi* to the north it differs in the paler, more brownish crown; paler, more olive, less brownish upper back; paler brown upper tail coverts; pale area on side of neck paler gray and more distinct; under parts average paler and generally grayer.

Compared with *oustaleti* to the west it differs in having the crown brownish (not black); in having the back paler, with less brown; in the pale area on the side of the neck being grayer (less whitish) and less distinct; in the gray edging of the breast feathers being paler, consequently giving less of a scaled appearance, and appearing more as a grayish wash on a paler breast; and in having the outer edges of the secondaries more greenish olive, less citrine olive.

*Measurements.* Muli specimens, wing  $\bar{d}$  103, 107, 109, 112; 9 101, 101, 102, 104 mm.

*Range.* Western China, in the area of the great bend of the Yangtze; recorded from Muli (about lat. 28° 15', long. 100° 50') to Likiang (about lat. 26° 50', long. 100° 15').

*Remarks.* The pale area on the side of the neck, the most often used character in distinguishing Chinese races, in this population is intermediate between the condition in *oustaleti* and the extreme reduced condition in *blythi*. In color of the outer edges of the secondaries it agrees with *blythi*; but in being paler and in having the crown more brown than black it agrees with neither.

Berlioz (1928, p. 141) considered all Chinese birds to be one subspecies, *G. a. blythi* with *oustaleti* a synonym, referring the variation in his material to individual variation, and perhaps in part to age. In his review of the genus in 1930 he continued this treatment.

Riley, in 1926 and 1930, identified some of the present material as *oustaleti*, saying that the brown crown was perhaps a sexual character. This does not seem to be the case, each sex having an equal range of variation.

Presumably it has been this pale, brownish crowned population that has caused confusion in identification of Chinese birds and the discussion as to whether or not brown versus black crowns were due to sex, age or individual variation. Comparing this pale form from the eastern edge of the species' range with the pale forms from the western edge (*G. a. affinis* and *fluminis*)

from which it is separated by the dark race *G. a. oustaleti*, the race *G. a. muliensis* has the brown of the crown about as in *affinis*, the back about as in *fiemingi*, but differs from both in the reduced, less distinct and grayer pale area on the side of the neck, the duller, greener, less citrine olive edges of the secondaries, and the generally grayer tinge on the under parts.

*Specimens examined 20:* from great bend of the Yangtze area (Muli 8, Younging 2, Mt. Dyinaloko 1, Likiang area 9).

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